

1.1310 / RSS-102 Sec 4.2-Canada Safety Code 6; Table 5 **Maximum Permissible Exposure (MPE)**

Radiofrequency radiation exposure limits. - The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

1.1307 (b) In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation in excess of the limits in §§1.1310 and 2.1093 of this chapter.

Determine the maximum power density for the general / uncontrolled population minimum separation distance of 20 cm. (FCC limit = $f_{\text{MHz}} / 1500 \text{ mW/cm}^2$) (IC limit = $f_{\text{MHz}} / 150 \text{ W/M}^2$)
The power density is calculated as:

$$P_d = \frac{P_t \times G}{4 \times \pi \times r^2}$$

P_d = power density in milliwatts/cm² (FCC) or watts/m²(IC)

P_t = transmit power in milliwatts(FCC) or watts(IC)

G = numeric antenna gain

r = distance between body and transmitter in centimeters(FCC) or meters(IC).

FCC Limits

$$908 \text{ MHz} / 1500 = 0.605 \text{ mW} / \text{cm}^2 @ 20\text{cm}$$

IC Limits:

$$908 \text{ MHz} / 150 = 6.05 \text{ W} / \text{M}^2 @ 0.2\text{M}$$

Max antenna gain = 0.74 dBi = 1.19 numeric

Max TX power = 22.74 dBm = 188 mW = 0.188 Watts

results: FCC $P_D = (1.19 \times 188) / (4 \times \pi \times 20\text{cm}^2) = 0.045 \text{ mW} / \text{cm}^2 @ 20 \text{ cm}$

results: IC $P_D = (1.19 \times 0.188) / (4 \times \pi \times 0.2\text{M}^2) = 0.445 \text{ W} / \text{M}^2 @ 0.2\text{M}$

These results are not in excess of the limits set forth in the rules, therefore an EA is not required.